PATENT SPECIFICATION (11) 1202324

1202324

DRAWINGS ATTACHED

(21) Application No. 4943/68 (22) Filed 31 Jan. 1968

(31) Convention Application No. 613 917 (32) Filed 3 Feb. 1967 in

(33) United States of America (US)

(45) Complete Specification published 12 Aug. 1970

(51) International Classification B 32 b 1/04

(52) Index at acceptance

B5N 17Y 199 221 22X 22Y 249 543 582 585 598 60Y 648 653 655 656 728 735 787 788 789 790

B2E 209 219 249 268 349 478 806

E1B 4C2X 4F2X

(54) LAMINATED FLOOR TILE

(71) We, ARMSTRONG CORK COMPANY, a Corporation organized according to the laws of the State of Pennsylvania, United States of America, of Lancaster, Pennsylvania 17604, United States of America, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The invention relates to a floor covering in the form of a foam backed tile which provides a resilient floor covering. The invention particularly relates to means for ensuring a satisfactory seam between adjacent tiles.

Up to this time the bulk of resilient flooring with a foam backing has been made in sheet form. A special adhesive and tool is used to fasten together abutting edges of the sheet goods. However, the technique for fastening the butting edges together usually requires a skilled artisan and cannot be done by the ordinary handyman.

Floor tiles having a foam backing exhibit disadvantages due to the relative movement that will exist between the edges of adjacent tiles that are not bonded together. The disadvantages manifest themselves in the form of damaged edges, increased dirt retention in the area between the tiles and in extreme cases create an accident hazard due to unevenness.

The present invention provides a laminated floor tile comprising a thin wear layer on a backing of a resilient foamed layer, in which the peripheral area of the face of the tile comprising the wear layer is depressed relative to the remainder of the face and the foam beneath the depressed area is denser than the foam beneath the remainder of the face.

It is neither desirable nor practical to lay a floor tile in which adjacent edges of a plurality of tiles are bonded together in the manner that foam backed sheets are laid. The depression and densification of the contacting edges of each tile according to the invention eliminates the need to adhere the edges together, and provides a control of the joint structure which eliminates the problems usually accompanying an unbonded seam structure. The depression and densification provide an edge thickness control, limit relative movement between adjacent tile edges, and lower the edges below the level of normal foot traffic.

The invention will now be described in greater detail by way of Example with reference to the accompanying drawing in which:

Figure 1 is a sectional view of adjacent tiles laid in an abutting relationship; and

Figure 2 is an isometric view of a tile.

Referring to the drawing, the individual tiles 10 are composed of a laminated structure consisting of a wear layer 12 and foam material backing 14. The edges 16 of the individual tiles are depressed to provide a reduction in the thickness of the backing material in the region adjacent the edges of the tiles.

The depression and densification may be accomplished by either one of two means. It may be performed mechanically, after the foaming of the backing material, by crushing the foam beneath the peripheral area. It can also be accomplished chemically by treating the backing material beneath the peripheral area, prior to foaming, with a substance that inhibits foam formation, so that, during the foaming stage, the treated backing material will not foam while the centre portion of the backing material will foam to give a raised tile structure.

The particular wear layer 12 and backing material 14 contemplated for use with this tile may be made from any of the commonly used and conventionally available floor covering materials now in current use.

The densification of the backing material adjacent the edge of the tiles results either from the crushing of a foamed backing material or the inhibiting of the foaming of the backing material. This densification of the

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backing material then provides a control of the edge thickness and a diminishing of the resiliency of the tiles in the region of their edges. Also the depression and densification removes the edges from contact with objects passing over the tile since most objects passing over the tile will tend to rest on the raised areas or bridge the depressed areas and thereby not apply a force to the edge structure. The above features therefore remove the tile edge structure from the factors that normally generate the disadvantages associated with a foam backed flooring. The ordinary homeowner is now supplied with a floor tile that does not require the bonding together of individual tile edges and a tile that does not exhibit the disadvantages normally attributed to the unbonded tile edge structure.

WHAT WE CLAIM IS:—

1. A laminated floor tile comprising a thin wear layer on a backing of a resilient foamed layer, in which the peripheral area of the face of the tile comprising the wear layer is depressed relative to the remainder of the face and the foam beneath the depressed area is denser than the foam beneath the remainder of the face.

2. A tile as claimed in claim 1, wherein depression and densification is effected mechanically by crushing the foam beneath the peripheral area.

3. A tile as claimed in claim 1, wherein the depression and densification is effected chemically by treating the backing material beneath the peripheral area, prior to foaming, with a substance that inhibits foam formation.

4. A laminated floor tile substantially as described herein with reference to and as shown in Fig. 2 of the accompanying drawing.

5. A floor covering comprising a plurality of individual foam backed floor tiles as claimed in claim 1 laid adjacent each other with the edges of their peripheral areas in contact.

6. A floor covering as claimed in claim 5, substantially as described herein with reference to and as shown in Fig. 1 of the accompanying drawing.

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Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1970.
Published by the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.

1202324 COMPLETE SPECIFICATION
1 SHEET This drawing is a reproduction of the Original on a reduced scale

Fig. 1

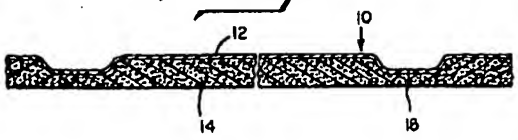
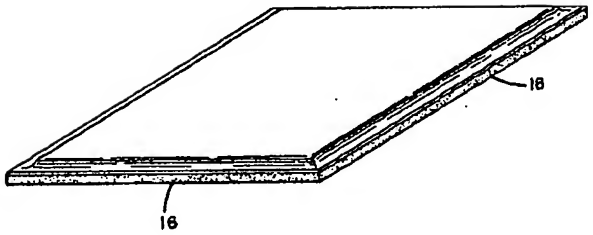


Fig. 2



(54) 层压地板

根据美国宾夕法尼亚法律成立的 ARMSTRONG CORK 公司（位于宾夕法尼亚兰州开斯特市 17604），在此宣布我们申请的发明专利以及操作这项发明的一些方法已予以认可，特别是以下所具体描述的：

此项发明是关于地板底面是泡沫形态从而使地板具有弹性的一种地板。特别是此项发明也谈及到保证地板拼装具良好拼缝的方法。

目前为止，大批这种有泡沫基层的地板被制作成板料形式，采用一种特殊的粘合剂和工具把板料产品的接合端头牢牢地粘合在一起，但是，把接合端头牢固粘合在一起的技术通常要求熟练的技工，普通工人无法做到。

由于拼装却没有粘合在一起的地板边缘之间存在着相对位差，这种带有泡沫基层的地板表现出它的不利。这种不利表现在对边缘造成损坏，增加地板间容易积留污渍的区域，由于不平坦会导致的意外危险。

此项发明是在弹性泡沫基层上复合一层薄的耐磨层而制成的地板。这种带耐磨层的表面相对于其它地方来说是在边缘区域施压。受压区域下的泡沫比其它区域下的泡沫密度大。

以铺装泡沫层板料的方法把大多数地板拼装处粘合在一起来拼装地板既不适当也不实用。根据发明，每块地板连接边缘的凹陷和压实不需要把边缘粘合在一起，而是通过采用连接结构来控制使它解决了通常出现的不粘合导致离缝的问题。凹陷和压实提供了边缘的厚度控制，限制了地板拼接边缘之间的相对位差，使地板边缘低于普通人流行走水平面。

此项发明将通过例子和所附图纸来做详细说明：

图 1 是一个拼接在一起的地板断面图。

图 2 是地板立体图。

参考图纸，单块地板 10 是由耐磨层 12 和泡沫材料基层 14 复合而成。在单块地板的边缘 16 进行压制，使地板与地板接合处的产生一个凹陷面。

凹陷和压实可以通过两种方法中的任一方法来完成。在基层材料发泡后，可以通过机械压制的方法压实边缘区域。也可以在起泡前，物质将成泡沫型时，化学处理在边缘区下的基层材料，因此，在起泡阶段，当底层材料的中部起泡以致地板有凹陷结构时，被处理过的基层材料将不会起泡。

这种地板所采用的特殊的耐磨层 12 和底层材料 14 都是以目前所用的一些常规适宜的地板材料制成。

地板拼装边缘基层材料的压实可以通过对基层泡沫材料的压制来实现。这种基层

材料通过控制边缘厚度使地板边缘区域弹性逐渐变小。这种凹陷和压实也使地板边缘避免与经过地板的物体接触。因为大多数经过地板的物体趋于停留在突出的地方或者跨过凹陷区域，因此对边缘区域不着力。所以上述特征避免了地板边缘结构与基层泡沫材料通常会产生不利的因素，一般家庭用户就不需要将地板边缘粘合在一起，即使地板边缘不粘合，地板也不会产生磨损。

我们的权利要求是：

1. 这种层压地板是在弹性泡沫层上复合一层薄的耐磨层而制成。这种复合了耐磨层的地板相对于表面其它地方来说是在边缘区域进行压制，受压区域下的泡沫比其它区域下的泡沫密度大。
2. 如要求 1 中所述的，凹陷和压实可以通过机械压制边缘区域下的基层泡沫材料的方法来实现。
3. 如要求 1 中所述的，凹陷和压实可以在起泡前，物质将成泡沫型时，通过化学处理边缘区域下的基层泡沫材料的方法来实现。
4. 如要求 1 所要求的地板， 其详细的描述可以参考附图 2。
5. 如要求 1 中所述的，地板铺设由许多单块泡沫基层的地板边缘与边缘互相连接而成。
6. 如要求 5 中所述的地板铺设详细描述参考附图 1。